Space Weather Forecast

Issued on Saturday, 25 June 2022 at 01:25 Local

This forecast provides a four day assessment of space weather events. The probabilities stated below are for reaching or exceeding the given levels. For more information about space weather impacts please see the Met Office Space Weather Scales https://www.metoffice.gov.uk/weather/learn-about/space-weather/uk-scales

Space Weather Forecast Headline: Slight Chance of a moderate-class X-ray flare. Slight chance of G1/Minor Geomagnetic Storms, peaking Saturday 25 June.

Analysis of Space Weather Activity over past 24 hours

Solar Activity: Solar activity has remained Low over the past 24 hours, with only isolated low level C-class flares. There are currently three sunspots on the visible disc, with AR3038 remaining the largest of the region and also the most complex. However, this region in the northwest quadrant has diminished in size and complexity through the period. The other two sunspots are small and stable.

A large filament in the northwest disc was seen to lift off early on the 24 June. Lack of available imagery has hindered the analysis, as a CME may have been emitted, and any CME may have an Earth directed component. However, currently no Earth-directed CME's are expected.

Solar Wind / Geomagnetic Activity: The solar wind speed was predominantly 410-450 km/s, but very briefly peaked at 542 km/s at 24/1508 UTC. The strength of the solar winds magnetic field was weak until 24/1547 UTC, thereafter increased to moderate levels. The important north-south component of the magnetic field was positive for the first half of the period, then became largely weakly negative from 24/1515. The resulting geomagnetic activity was Quiet to Unsettled.

Energetic Particles / Solar Radiation: No solar radiation storms were observed.

Four-Day Space Weather Forecast Summary

Solar Activity: Solar activity is likely to be Low, with a daily Slight Chance of an isolated Moderate class flare. One region, which is the largest and most complex on the disc, currently generates the main flare risk, but will rotate off the visible disc during day 3 (27 June). No significant returning regions are expected to rotate onto the visible disc through the period.

Solar Wind / Geomagnetic Activity: No CMEs are currently thought to be Earth directed. Occasional enhancements, in the currently slightly elevated solar wind, to elevated or perhaps strong speeds, likely from later today and through days 2 and 3 (26th and 27th). Solar winds are expected to decline to slightly elevated levels through day 4 (28th). There is a Slight Chance of Minor Storms periods later today and especially through tomorrow, otherwise geomagnetic activity is expected to be Quiet to Unsettled for much of today, and also through day 4, while in-between increasing Unsettled to Active.

Energetic Particles / Solar Radiation: No solar radiation storms are expected but with a daily slight chance of an S1 or greater event as a result of the large sunspot gradually nearing the better-connecting (with Earth) western limb.

Issued by Met Office Space Weather Advisor, Tel: +44 (0) 330 135 4254 Email: moswoc@metoffice.gov.uk

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Geomagnetic Storms:

Geo-Magnetic Storm Probability (Exceedance)	Level	Past 24 Hours (Yes/No)	Day 1 (00-24 UTC) (%)	Day 2 (00-24 UTC) (%)	Day 3 (00-24 UTC) (%)	Day 4 (00-24 UTC) (%)
Minor or Moderate	G1 to G2	No	20	20	10	1
Strong	G3	No	1	1	1	1
Severe	G4	No	1	1	1	1
Extreme	G5	No	1	1	1	1

Radio Blackouts - X Ray Flares:

X Ray Flares Probability	Level	Past 24 Hours (Yes/No)	Day 1 (00-24 UTC) (%)	Day 2 (00-24 UTC) (%)	Day 3 (00-24 UTC) (%)	Day 4 (00-24 UTC) (%)
Active	R1-R2 M Class	No	15	15	15	5
Very Active	R3 to R5 X	No	2	2	2	1

Solar Radiation Storms - (High Energy Protons):

Radiation Storms Probability (Exceedance)	Level (cm^{-2} sr^{-1} s^{-1})	Past 24 Hours (Yes/No)	Day 1 (00-24 UTC) (%)	Day 2 (00-24 UTC) (%)	Day 3 (00-24 UTC) (%)	Day 4 (00-24 UTC) (%)
Active	≥ S1	No	5	5	5	2
Very Active	≥ S3 *	No	1	1	1	1
* S3 ≥ 10 MeV ≥ 1000 pfu and / or ≥ 50 MeV ≥ 10 pfu. (pfu = $cm^{-2}sr^{-1}s^{-1}$)						

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